

## CLAIMS

We claim:

1. A sample analysis instrument for use with a fluidic cartridge, said cartridge containing a liquid sample and having a first analysis regions, said apparatus comprising:

5 a cartridge holder; and

a flow cytometric measuring apparatus positioned to be optically coupled with said analysis region.

2. The instrument of claim 1 wherein said flow cytometric measuring apparatus comprises a light source aligned to illuminate said analysis region and further comprises a photodetector aligned to collect light from said analysis region.

3. The instrument of claim 2 wherein said light collected by said photodetector is scattered light.

4. The instrument of claim 2 wherein said light collected by said photodetector is fluorescent light.

- 15 5. ~~3~~. The instrument of claim 2 wherein said light source is a laser light source.

6. ~~A~~. The instrument of claim ~~3~~<sup>5</sup> wherein said laser light source is aligned upstream from a flow direction of particles in said analysis region so as to direct a beam of light on said particles, said beam of light traveling in a plane defined by the flow direction of said particles.

7. ~~5~~. The instrument of claim ~~4~~<sup>6</sup> wherein said photodetector is aligned with respect to said plane so as to intercept a beam of light reflected from said light source by said particles.

8 6. The instrument of claim 1 wherein said cartridge has cartridge alignment markings thereon and wherein said holder has alignment markings thereon to mate with said cartridge alignment markings.

5 9 7. The instrument of claim 1 wherein said cartridge contains a pump interface and wherein said apparatus further comprises a pump mechanism positioned to couple with said pump interface.

10 8. The instrument of claim <sup>9</sup>7 wherein said pump interface is a syringe pump interface and wherein said pump mechanism is a syringe pump.

11 9. The instrument of claim 1 wherein said cartridge contains a valve interface and wherein said apparatus further comprises a valve mechanism positioned to couple with said valve interface.

12 10. The instrument of claim <sup>11</sup>9 wherein said valve interface is a pinch valve interface and wherein said valve mechanism is a pinch valve mechanism.

13 11. The instrument of claim 1 also comprising a second measuring apparatus positioned to be coupled with said second analysis region.

14 12. The instrument of claim <sup>13</sup>11 wherein said second measuring apparatus comprises absorption measuring apparatus.

15 13. The instrument of claim <sup>13</sup>11 wherein said second measuring apparatus comprises electrical measuring apparatus.

20 14. The instrument of claim 1 which is disposable.